Amendments to the Claims

This listing of the claims will replace all prior versions and listings of the claims in the application.

Claims 1-74 were originally filed.

Claims 10, 14, 44, 62, 66, and 72 were previously canceled without prejudice.

Claims 5, 53 – 61, 63-65, 67-68, and 70 are currently canceled without prejudice.

No new claims have been added.

Accordingly, claims 1 – 4, 6 – 9, 11 – 13, 15 – 43, 45 – 52, 69, 71, 73, and 74 are pending.

1. (currently amended) A method comprising:

rendering a polygonal mesh to produce a computer-generated image, the image exhibiting aliasing at its discontinuity edges;

sorting the discontinuity edges prior to overdrawing; ~~and~~

overdrawing the discontinuity edges as antialiased lines to reduce the aliasing;

identifying sharp edges prior to said rendering; and

finding silhouette edges during runtime, the discontinuity edges being a union of the sharp edges and the silhouette edges.

2. (original) A method as recited in claim 1, wherein the polygon mesh comprises a set of triangles.

3. (original) A method as recited in claim 1, wherein the image is stored in memory after rendering, and the overdrawing comprises rendering the discontinuity edges as antialiased lines in the memory to reduce the aliasing at the discontinuity edges.

4. (original) A method as recited in claim 1, further comprising identifying the discontinuity edges as a collection of silhouettes and sharp edges.

5. (canceled)

6. (original) A method as recited in claim 1, further comprising shading the discontinuity edges.

7. (original) A method as recited in claim 1, further comprising blending selected discontinuity edges.

8. (original) A method as recited in claim 1, further comprising orienting the discontinuity edges in a consistent manner.

9. (original) A method as recited in claim 1, further comprising asymmetrically blending selected discontinuity edges.

10. (canceled)

11. (original) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 1.

12. (previously amended) A method comprising:

determining discontinuity edges of a polygon mesh by identifying sharp edges during a preprocess prior to rendering the polygon mesh and finding silhouette edges during runtime after rendering the polygon mesh; and

overdrawing the discontinuity edges as antialiased lines.

13. (original) A method as recited in claim 12, wherein said determining comprises identifying sharp edges and silhouettes.

14. (canceled)

15. (original) A method as recited in claim 12, further comprising shading the discontinuity edges.

16. (original) A method as recited in claim 12, further comprising blending selected discontinuity edges.

17. (original) A method as recited in claim 12, further comprising asymmetrically blending selected discontinuity edges.

18. (original) A method as recited in claim 12, further comprising orienting the discontinuity edges in a consistent manner.

19. (original) A method as recited in claim 12, further comprising sorting the discontinuity edges prior to said overdrawing.

20. (original) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 12.

21. (original) In a process for rendering computer-generated graphics, a method comprising:

constructing a data structure prior to rendering a polygon mesh; and

finding silhouette edges in the polygon mesh during runtime using the data structure; and

omitting concave silhouette edges from the data structure.

22. (original) A method as recited in claim 21, further comprising overdrawing the silhouette edges as antialiased lines.

23. (original) A method as recited in claim 21, further comprising shading the silhouette edges.

24. (original) A method as recited in claim 21, further comprising blending selected silhouette edges.

25. (original) A method as recited in claim 21, further comprising asymmetrically blending selected silhouette edges.

26. (original) A method as recited in claim 21, further comprising sorting the silhouette edges.

27. (original) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 21.

28. (previously amended) In a process for rendering computer-generated graphics, a method comprising:

identifying sharp edges prior to runtime;

constructing a data structure prior to rendering a polygon mesh;

finding silhouette edges in the polygon mesh during runtime using the data structure; and

collecting the sharp edges and the silhouette edges in a list of discontinuity edges of the polygon mesh.

29. (original) A method as recited in claim 28, further comprising shading the discontinuity edges.

30. (original) A method as recited in claim 28, further comprising blending selected discontinuity edges.

31. (original) A method as recited in claim 28, further comprising asymmetrically blending selected discontinuity edges.

32. (original) A method as recited in claim 28, further comprising sorting the discontinuity edges.

33. (original) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 28.

34. (original) A method comprising:

rendering a polygonal mesh;

determining discontinuity edges of the polygon mesh;

sorting the discontinuity edges according to visibility; and

overdrawing the discontinuity edges in an order resulting from said sorting.

35. (original) A method as recited in claim 34, wherein said determining comprises:

identifying sharp edges prior to said rendering; and

finding silhouette edges during runtime, the discontinuity edges being a union of the sharp edges and the silhouette edges.

36. (original) A method as recited in claim 34, wherein said sorting comprises sorting the discontinuity edges according to depth.

37. (original) A method as recited in claim 34, wherein said overdrawing comprises overdrawing the discontinuity edges as antialiased lines.

38. (original) A method as recited in claim 34, further comprising shading the discontinuity edges.

39. (original) A method as recited in claim 34, further comprising blending selected discontinuity edges.

40. (original) A method as recited in claim 34, further comprising asymmetrically blending selected discontinuity edges.

41. (original) A method as recited in claim 34, further comprising orienting the discontinuity edges in a consistent manner.

42. (previously presented) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 34.

43. (previously amended) A method comprising:

rendering a polygonal mesh;

identifying one or more silhouette edges of the polygon mesh for a given viewpoint by constructing a data structure prior to rendering the image and finding the silhouette edges during runtime using the data structure;

storing the silhouette edges in an output list; and

overdrawing the silhouette edges as antialiased lines.

44. (canceled)

45. (original) A method as recited in claim 43, further comprising shading the silhouette edges.

46. (original) A method as recited in claim 43, further comprising sorting the silhouette edges prior to said overdrawing.

47. (original) One or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 43.

48. (original) A method comprising:

A. during a preprocess phase, performing the following:

identifying sharp edges present in a polygon mesh used to generate a graphical image;

constructing a data structure to store possible silhouette edges identified during a subsequent runtime phase;

B. during the runtime phase, performing the following:

rendering the polygonal mesh to produce a rendered image;

identifying silhouette edges that occur from a given viewpoint of the rendered image using the data structure, the silhouette edges together with the sharp edges forming a set of discontinuity edges;

shading the discontinuity edges;

sorting the discontinuity edges; and

overdrawing the discontinuity edges as antialiased lines.

49. (original) A method as recited in claim 48, wherein the sorting comprises sorting the discontinuity edges according to depth.

50. (original) A method as recited in claim 48, wherein the shading comprises asymmetrically shading the discontinuity edges.

51. (original) A method as recited in claim 48, wherein the shading comprises applying blending processes that balance temporal smoothness and spatial sharpness.

52. (original) A method as recited in claim 48, wherein the shading comprises orienting the discontinuity edges in a consistent manner.

53 - 68. (canceled)

69. (currently amended) One or more computer-readable media comprising computer-executable instructions that, when executed, direct a graphics computing device to:

render a polygonal mesh;

detect discontinuity edges in the polygon mesh;

sort the discontinuity edges according to depth; ~~and~~

overdraw the discontinuity edges as antialiased lines to reduce the aliasing;

identify sharp edges prior to rendering the polygon mesh; and

find silhouette edges after rendering the polygon mesh, the discontinuity edges being a union of the sharp edges and the silhouette edges.

70. (canceled)

71. (original) One or more computer-readable media as recited in claim 69, further comprising computer-executable instructions that, when executed, direct the graphics computing device to shade the discontinuity edges.

72. (canceled)

73. (original) One or more computer-readable media as recited in claim 69, further comprising computer-executable instructions that, when executed, direct the graphics computing device to:

orient the discontinuity edges in a consistent manner; and

blend the discontinuity edges using asymmetric blending.

74. (previously presented) A system comprising:

means for identifying sharp edges present in a polygon mesh;

means for rendering the polygonal mesh to produce a rendered image;

means for identifying silhouette edges that occur from at least one viewpoint of the rendered image;

means for shading the sharp edges and the silhouette edges;

means for sorting the sharp edges and the silhouette edges; and

means for overdrawing the sharp edges and the silhouette edges as antialiased lines.